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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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11/06/2002

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EXAMINER

KIANNI, KAVEH C

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/554,599

Applicant(s)

IMAMURA ET AL. 

Examiner

Kevin C Kianni

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-38 is/are pending in the application.
- 4a) Of the above claim(s) 28-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

ETAILED ACTION

1. Applicant's election without traverse of claims 20-23 in paper No. 7 is acknowledged.

Drawings

2. The drawings are objected to because certain/essential numbered elements of the drawings in figures 1-2, 4-6, 10-12 and 18-20 are not labeled by name. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

3. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 22, is allowable because the prior art, in combination with other limitations of the base claim, does not teach wherein the secondary coat layer is made from a material having a negative coefficient of linear expansion.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 23 and 25-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandross et al. (US 5773486).

Regarding claims 20, Chandross teaches a fiber grating (shown in fig. 1) comprising a core 13 where a grating is written (col. 4, lines 5-13), a cladding 12 for covering the core 13, and a coat layer 11 for coating an outer face of the cladding (col. 4, lines 5-13), wherein the coat layer 11 is made from a UV transmitting resin (see col. 7, lines 3-20) and has a characteristic of transmitting UV at least of a wavelength band used for writing the grating (see col. 8, lines 16-22) and of curing by absorbing UV of a shorter wavelength band or a lower wavelength band than specific wavelength band (see fig. 2, and col. 4, lines 16-29), and the grating is written by irradiating the core with the UV of the wavelength band through the coat layer (see fig. 2 and col. 4, lines 40-54). However, Chandross does not explicitly state wherein the above wavelength grating of core is implemented through a specific wavelength. It is well known to those of ordinary skill in the art that laser operated in 242 nm for purpose of grating (col. 8, lines 16-18) is a specific wavelength, plotted in fig. 5, which is designed without a need for stripping the fiber coating (col. 1, lines 10-13) thus reducing costs.

Regarding claim 23, Chandross further teaches wherein the coat layer is formed from a single coat film with a thickness of 30 μm or more (col. 8, lines 2-3).

Regarding claim 25, Chandross teaches a method of fabricating a fiber grating (shown in fig. 1) comprising the steps of fabricating a glass fiber structure including a core where a grating is to be written and a cladding for covering the core (col. 4, lines 5-13); forming a coat layer of a UV transmitting resin for covering an outer face of the glass fiber structure (see col. 7, lines 3-20); and writing the grating in the core by irradiating the core with first UV through the coat layer (see col. 4, lines 5-14), wherein the step of forming the coat layer includes a step of curing the UV transmitting resin through irradiation having a different wavelength from the first UV (see col. 7, lines 1-20).

However, Chandross does not explicitly state wherein the above irradiation is using second UV. It is well known to those of ordinary skill in the art that a UV light operated in two different wavelengths at two different times is known for applying second UV for purpose of curing the coating (col. 7, lines 15-20) is a specific wavelength, plotted in fig. 5, which is designed without a need for stripping the fiber coating (col. 1, lines 10-13) thus reducing costs.

Regarding claim 26, Chandross further teaches wherein the first UV has a wavelength of 250 nm through 350 nm (see col. 4, lines 5-14).

Regarding claim 27, Chandross further teaches wherein the coat layer is formed by a single coating method in a thickness of 30 μm through 50 μm (col. 8, lines 2-3).

6. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandross et al. and DiGiovanni et al. (US 5907652).

Regarding claim 21 and 24, Chandross teaches all limitations that claim 20. Chandross further teaches connecting the fiber grating to another doped fiber (see at least col. 1, lines 17-19 and 38-42). However, Chandross does not specifically teach wherein the core is co-doped with Ge and Sn, and further doped with Al, a concentration of Ge is substantially the same as a concentration of Ge included in a core of another optical fiber to be connected to the fiber grating. DiGiovanni teaches optical fiber grating (shown in fig. 9) wherein the core is co-doped with Ge and Sn, and further doped with Al (col. 5, lines 1-7). Thus, DiGiovanni allows use of a protective polymer coating (col. 3, line 67). Thus it has been obvious to a person of ordinary skill in the art when the invention was made to modify Chandross' optical fiber coating by doping it with dopants taught by DiGiovanni and connection the resultant fiber with a fiber in which a concentration of Ge is substantially the same as a concentration of Ge included in a core of another optical fiber to be connected to the fiber grating in order to produce an optical grating that includes the above limitations, since the resultant optical grating fiber would be free of a need for stripping the fiber coating (col. 1, lines 10-13) thus reducing costs.

Citation of Relevant Prior Art

7. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Ito et al. 5867618

Kokura et al. 6069988

Ito et al. 5867618

These references are cited herein to show the relevance of the apparatus/methods taught within this reference as prior art.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-7722, (for formal communications intended for entry)

or:

(703) 308-7721, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South

Clark Place, Arlington, VA., Fourth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877


Frank Font

Supervisory Patent Examiner
Group Art Unit 2877

October 27, 2002